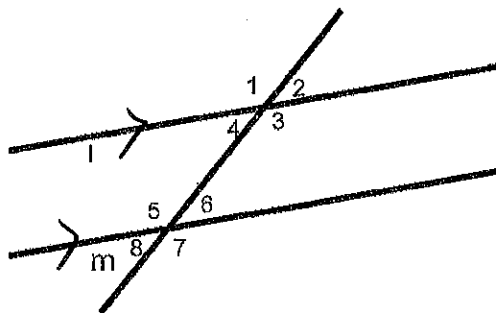


Name

Key

Date

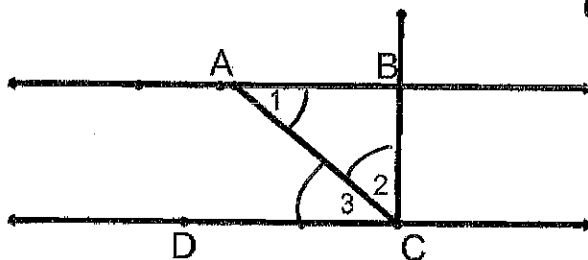
201 Parallel Line Proofs—worksheet 2

1. Given: $l \parallel m$ Prove: $\angle 3$ and $\angle 8$ are supplementary

Statements

Reasons

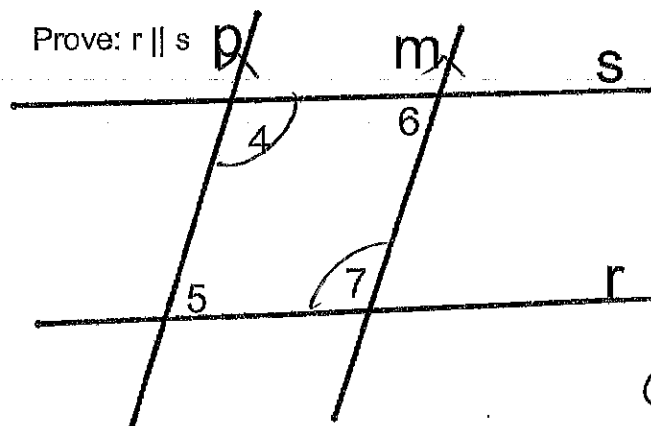
- | | |
|-----------------------------------|---------------------------|
| ① $l \parallel m$ | ① Given |
| ② $\angle 3 + \angle 6$ are suppl | ② Cons Int \angle s thm |
| ③ $m\angle 3 + m\angle 6 = 180$ | ③ def of suppl. |
| ④ $\angle 6 \cong \angle 8$ | ④ Vert \angle s \cong |
| ⑤ $m\angle 6 = m\angle 8$ | ⑤ def of \cong |
| ⑥ $m\angle 3 + m\angle 8 = 180$ | ⑥ Subst |
| ⑦ $\angle 3 + \angle 8$ are suppl | ⑦ def of suppl. |

2. Given: $\angle 1 \cong \angle 2$
CA bisects $\angle DCB$ Prove: $\overline{AB} \parallel \overline{DC}$ 

Statements

Reasons

- | | |
|---|--------------------------|
| ① \sim | ① Given |
| ② $\angle 2 \cong \angle 3$ | ② def of \angle Bis |
| ③ $\angle 1 \cong \angle 3$ | ③ transitive |
| ④ $\overline{AB} \parallel \overline{DC}$ | ④ Alt Int \angle Conv. |

3. Given: $p \parallel m$; $\angle 4 \cong \angle 7$ Prove: $r \parallel s$ 

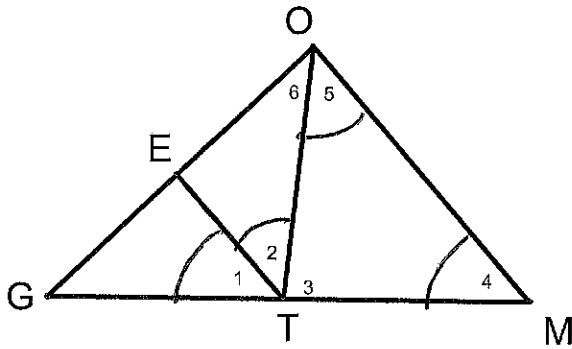
Statements

Reasons

- | | |
|-----------------------------------|--------------------------------|
| ① \sim | ① Given |
| ② $\angle 4 + \angle 6$ are suppl | ② Cons int \angle s thm |
| ③ $m\angle 4 + m\angle 6 = 180$ | ③ def of suppl |
| ④ $m\angle 4 = m\angle 7$ | ④ def of \cong |
| ⑤ $m\angle 7 + m\angle 6 = 180$ | ⑤ Subst |
| ⑥ $\angle 7 + \angle 6$ are suppl | ⑥ def of suppl. |
| ⑦ $r \parallel s$ | ⑦ Cons Int \angle s Converse |

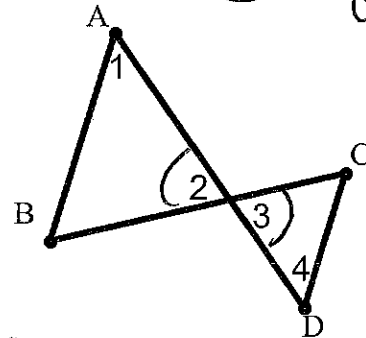
4. Given: $\overline{ET} \parallel \overline{MO}$; $m\angle 4 = m\angle 5$

Prove: \overline{TE} bisects $\angle GTO$



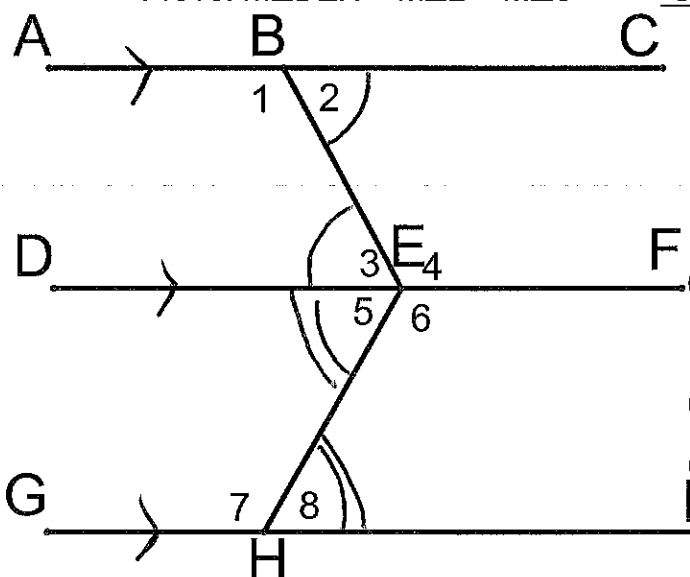
Statements	Reasons
① \sim	① Given
② $\angle 4 \cong \angle 1$	② Corr \angle s Post
③ $\angle 5 \cong \angle 2$	③ Alt Int \angle s Thm
④ $m\angle 4 = m\angle 1$; $m\angle 5 = m\angle 2$	④ def of \cong
⑤ $m\angle 1 = m\angle 2$	⑤ Subst
⑥ $\angle 1 \cong \angle 2$	⑥ def of \cong
⑦ \overline{TE} bis. $\angle GTO$	⑦ def of \angle bis

5. Given: $\angle 1$ and $\angle 2$ are complementary
 $\angle 3$ and $\angle 4$ are complementary
 Prove: $AB \parallel CD$



Statements	Reasons
① \sim	① Given
② $\angle 2 \cong \angle 3$	② Vert \angle s \cong
③ $\angle 1 \cong \angle 4$	③ \cong Compl. thm
④ $\overline{AB} \parallel \overline{CD}$	④ Alt Int \angle s Converse

6. Given: $\overline{AC} \parallel \overline{DF}$; $\overline{DF} \parallel \overline{GI}$
 Prove: $m\angle BEH = m\angle 2 + m\angle 8$



Statements	Reasons
① \sim	① Given
② $\angle 2 \cong \angle 3$ $\angle 8 \cong \angle 5$	② Alt Int \angle s Thm
③ $m\angle 2 = m\angle 3$ $m\angle 8 = m\angle 5$	③ def of \cong
④ $m\angle BEH = m\angle 3 + m\angle 5$	④ AAP
⑤ $m\angle BEH = m\angle 2 + m\angle 8$	⑤ Subst

Name _____

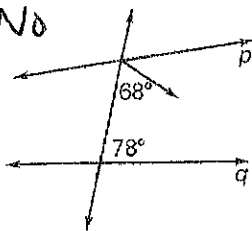
Date _____

LESSON
3.3**Practice C**

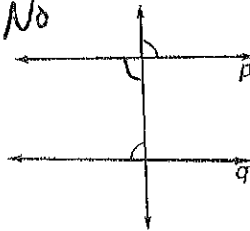
For use with pages 161–169

Is there enough information to prove that lines p and q are parallel? If so, state the postulate or theorem you would use.

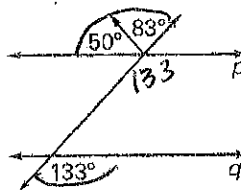
1. No



2. No



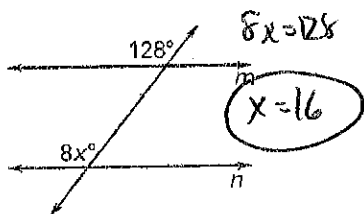
3.



yes, Alt ext
L-Trans
Converge

Find the value of x that makes $m \parallel n$.

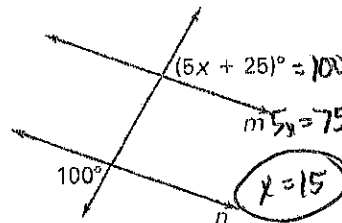
4.



$$8x = 128$$

$$x = 16$$

5.

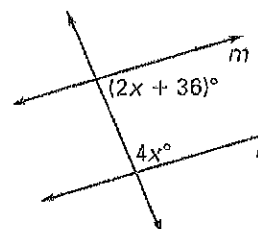


$$(5x + 25)^\circ = 100$$

$$m = 75$$

$$x = 15$$

6.

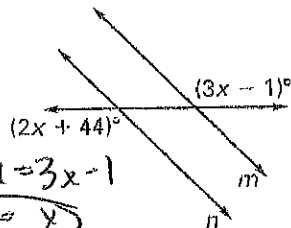


$$2x + 36 + 4x = 180$$

$$6x = 144$$

$$x = 24$$

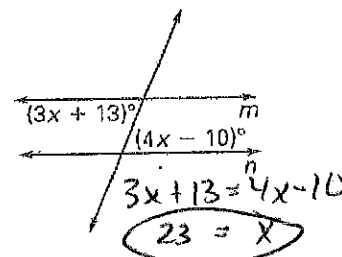
7.



$$2x + 44 = 3x - 1$$

$$45 = x$$

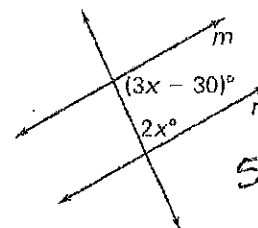
8.



$$3x + 13 = 4x - 10$$

$$23 = x$$

9.



$$5x - 30 = 180$$

$$5x = 210$$

$$x = 42$$

In Exercises 10–14, use the diagram and the given information to determine if $m \parallel n$, $p \parallel q$, or neither.

yes $m \parallel n$
10. $\angle 3 \cong \angle 10$ (Alt ext)

no $m \parallel n$
11. $\angle 1 \cong \angle 13$

no $p \parallel q$
12. $\angle 4 \cong \angle 11$

yes $p \parallel q$
13. $\angle 12 \cong \angle 13$ (Alt int)

no
14. $\angle 3 \cong \angle 14$

